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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,374	10/03/2003	Peter J. Pupalaikis	455610-2600.1	4020

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EXAMINER
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TSAI, CAROL S W

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/678,374

Applicant(s)

PUPALAIKIS ET AL.

Examiner

Carol S Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 7 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 8, 10, 11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,125,100 to Katznelson.

With respect to claims 1 and 2, Katznelson discloses a digital group delay compensation system comprising: a digital allpass filter that is utilized in an implementation phase; and a system that generates coefficients for the allpass filter used in the implementation phase such that the overall performance of a system is measured and optimized in a calibration phase (see col. 18, line 39 to col. 19, line 33 and col. 20, line 33 to col. 21, line 6).

As to claim 3, Katznelson also discloses the definition of optimum overall performance of a system is user configurable and based on the measured amount of risetime, overshoot, and preshoot in the system step response and as such the optimization balances these three characteristics (see col. 18, lines 25-38).

As to claim 5, Katznelson also discloses the response of the uncompensated system to a stimulus is calculated using an internally generated ideal stimulus and the measured uncompensated channel response characteristics (see Figs. 2 and 3 and col. 6, lines 9-40).

As to claims 8 and 13, Katznelson also discloses in the calibration phase, the response of the uncompensated system to a known stimulus being measured such that the known stimulus passes through additional hardware connected to the channel, such as a probing element, to include the effects of this additional hardware in the compensation (see col. 7, lines 42-68).

As to claims 10 and 11, Katznelson also discloses the calibration phase being entered periodically allowing dynamic calibration for changing channel response characteristics (see col. 6, lines 9-40).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katznelson in view of U. S. Patent No. 6,532,256 to Miller.

As noted above, Katznelson discloses the claimed invention, except for the allpass filter arrangement being a polyphase arrangement capable of filtering the response of the uncompensated system to a known stimulus with an allpass filter designed for a different sample rate while preserving the sample rate of the response of the uncompensated system to the known stimulus.

Miller teaches the allpass filter arrangement being a polyphase arrangement capable of filtering the response of the uncompensated system to a known stimulus with

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an allpass filter designed for a different sample rate while preserving the sample rate of the response of the uncompensated system to the known stimulus (see col. 29, lines 30-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Katznelson's method to include the allpass filter arrangement being a polyphase arrangement capable of filtering the response of the uncompensated system to a known stimulus with an allpass filter designed for a different sample rate while preserving the sample rate of the response of the uncompensated system to the known stimulus, as taught by Miller, in order that some of the de-rotation coefficients in the de-rotation matrix are adjusted to compensate for the frequency-dependent distortion in the transmission path (see Miller, col. 29, lines 39-42).

#### *Allowable Subject Matter*

5. Claims 4, 6, 7, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hammes et al. disclose a receiver circuit of a cordless communication system having an analog signal processing section with a channel selection filter and a digital signal processing section which is connected downstream of the latter and has a group

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delay equalizer.

Bohn et al. disclose a compensation system for adaptive equalization of an optical signal, wherein an optical filter, whose complex coefficients are adjustable, is used for signal equalization.

Rosenfeldt discloses a method of influencing a group delay of an optical signal, comprising the steps of a: splitting a beam of the optical signal into  $n$  parts, each part traveling an optical path,  $n$  being a natural number greater zero, b: splitting all of the  $n$  parts into  $m$  subparts, each part traveling an optical path,  $m$  being a natural number greater zero, c: superimposing the  $k$ th subpart of at least two of the  $m$  subparts to a resulting  $k$ th superimposed part,  $k=1$ , d: repeating step c for  $k$  from 2 to  $m$ , e: performing steps b to d at least one time with at least two of the superimposed parts, f: using at least one of the resulting superimposed parts for influencing the group delay of the optical signal.

Ribic discloses a method for suppressing noise as well as a method for recognizing voice signals.

Jain discloses an optical device for receiving input light and for acting on the input light to produce output light includes a first reflector and a second reflector supported in a spaced-apart, confronting relationship with the first reflector such that the input light received by the optical device, at least potentially, undergoes multiple reflections between the first and second reflectors.

Zenteno discloses an apparatus and method of chromatic dispersion including the

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negative compensation per channel filter coupled to an optical receiving path for providing a lossless discontinuous per-channel dispersion compensation in the optical receiving path.

Wildhagen discloses digital filter for IQ-generation, noise shaping and neighbour channel suppression.

Crawford discloses a method of transmission level security, and a corresponding transmission security system, the method consists of the steps of: forming a plurality of digital signals representing a symbol to be transmitted over a communication medium, wherein respective ones of the plurality of digital signals are modulated onto respective ones of a plurality of subcarriers according to a multiple carrier modulation scheme; and introducing a predetermined group delay distortion in one or more of the plurality of subcarriers, such that portions of the one or more of the plurality of subcarriers will be received outside of a time window corresponding to the symbol at a receiver.

### ***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

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In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.



Carol S. W. Tsai  
Patent Examiner  
Art Unit 2857

01/04/05